



Attorney's Docket No.: 088162.P213

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application for:

Daniel C. Cauchy, et al.

Serial No.: 09/737,384

Filed: December 14, 2000

For: DIVERSE ROUTE COMPUTATION

Examiner: Tran, Dzung D.

Art Group: 2633

DECLARATON UNDER 37 C.F.R. §1.131

Mail Stop Amendment  
Commissioner for Patents  
Post Office Box 1450  
Alexandria, Virginia 22313-1450

Sir:

I am an attorney of record in the above-referenced patent application, having Serial No. 09/737,384. I further declare that:

1. I am a partner with the law firm of Blakely, Sokoloff, Taylor & Zafman LLP, counsel for the assignee of the above-referenced patent application.
2. The prosecution file at our firm for the subject patent application contains a copy of an invention disclosure document having reference number 79441 (copy enclosed as Appendix A) which describes an embodiment of the invention in the context of PNNI.
3. An attorney who is no longer with the firm worked on the preparation and filing of the above-referenced patent application. I have reviewed a summary of the time entries for this attorney towards preparation of the patent application. There is a

time entry for October 25, 2000 by such attorney, reporting the time spent for "preparation of patent application – disclosure".

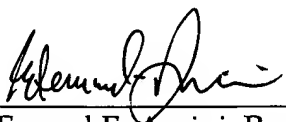
4. Thereafter, there are several time entries for preparation of the patent application, between October 27, 2000 and November 3, 2000. According to the prosecution file, a draft of the patent application was submitted to the inventors on November 2, 2000.

5. The attorney's time entries resume on November 16, 2000 until November 28, 2000 (the latter indicating "preparation of patent application – final draft"). The file also contains correspondence dated November 28, 2000 from the attorney to the inventors, reporting on a final draft of the application.

6. Thereafter, there are additional time entries between December 4<sup>th</sup> through December 14<sup>th</sup>, 2000, culminating with "preparation of patent application – file".

7. I hereby declare that all statements made herein of my own knowledge are true, that all statements made herein on information and belief are believed to be true, and all statements herein are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-referenced patent application or any patent issued thereon.

Dated: June 24, 2005

By   
Farzad E. Amini, Reg. No. 42,261

## APPENDIX A

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## Patent Idea Details for Idea #79441

P213

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## GENERAL INFORMATION

**Title:** Diverse route computation using PNNI**ID:** 79441**Patent No.:** ---, ---**URL:**

**Inventors:** [Daniel Cauchy \(dcauchy\)](#), [Krishna Sundaresan \(ksundar\)](#), and [Mahesh Chellappa \(maheshc\)](#)

*More details on these inventors [listed below](#).*

**Date Entered:** 24-Apr-2000**Date:** 24-Apr-2000**Modified:**

**Background:** Currently customers using fibers for long haul networks, configure multiple OC48 trunks on a single fiber using DWDM. They run PNNI routing/signalling protocol on each trunk. From the view of the PNNI protocol, each of the trunk is distinct.

Customers using I.630, want to have completely disjoint routes for their critical SPVCs. If one of the routes fail, then using I.630 the SPVC data is sent over another pre-established disjoint route.

PNNI protocol can provide disjoint routes (also called as diverse routes) at the trunk level. Currently PNNI is transparent of the multiple trunks passing through a single fiber. In the case of a fiber cut/failure, PNNI does not have the capability to provide a route which excludes this fiber. So even the disjoint path, which PNNI computes, might still include a trunk passing through the same fiber.

**Summary:** PNNI protocol provides system Capability Information Groups

through which system specific information can be propagated. These system capability IGs can be added to any Protocol Topology State Elements (PTSE). To solve the problem of computing diverse routes in a fiber scenario, we propose to use the System Capability IG in the Horizontal Link PTSE (HLink PTSE) to carry the information about the fiber.

When we generate Hlink PTSE for a PNNI link, we propose to add a System Capability IG which will include a unique fiber ID. This fiber ID information in the Hlink PTSE is propagated thorough out the network according to the PNNI routing protocol. For the trunks for which fiber ID needs to be propagated, it should be configured through the CLI. The system capability IG for the Hlink PTSE will be added only when the fiber ID is configured for a trunk.

When computing diverse routes for SPVCs, PNNI routing computation algorithm will use the fiber ID in the HLink PTSE to avoid trunks passing through the same fiber.

**Advantages:** Since this solution uses a standard PNNI protocol capability, it is interoperable to the PNNI protocol implementation from other vendors. The PNNI implementation from other vendors will not interpret this information but will flood this information transparently. All Cisco switches can use this information.

**Cisco Use:** This can be supported as the part of diverse route implementation for SPVCs. Many customers have requested for solution for this above mentioned problem.

**Method of Detecting Use By Other Companies:** By looking for the support for diverse routes we can findout how other companies support diverse routes passing through the same fiber. This information should be available in the product brochures.

**Companies:**

**Previous** ---

**Public Use:**

**First Written** ---

**Record Date:**

**First Written** ---

**Record URLs:**

**Supporting** ---

**Docs URLs:**

**Notes:** ---

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